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An assessment of shiftwork effects on job/family management and role strain in dual-earner couples

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THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO, 1986

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AN ASSESSMENT OF SHIFTWORK EFFECTS ON JOB/FAMILY MANAGEMENT AND ROLE STRAIN IN DUAL-EARNER COUPLES

by

James L. Burston

A Dissertation Submitted to
the Faculty of the Graduate School at
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APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at the University of North Carolina at Greensboro.

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The purpose of this research was to investigate relationships between different shiftwork combinations of individuals in dual-earner dyads and their perceptions of family management strain and family role strain. A secondary purpose was to examine the demographic factors of age, sex, number of children under 18 living at home, and sex role perceptions as these variables relate to family management strain and family role strain. Three hundred fourteen respondents, 226 women and 88 men, comprised the sample.

A sex-of-respondent by shiftwork combination ANOVA indicated that shift combination was not a significant factor in family management strain perceptions and only a marginally significant factor for family role strain perceptions. Women working non-standard shifts with husbands working standard shifts reported significantly higher levels of family role strain than women working first shifts with husbands working non-standard shifts. Women reported significantly higher levels of family management strain and family role strain than men over all shift combinations.

A multivariate analysis indicated that traditional perceptions of male and female roles was not a reliable predictor of family management strain but was a reliable predictor of family role strain. Age of respondent and the number of children under 18 living at home were significant predictors of family management strain scores and family role strain scores accounting for 5% and 17% of the variation, respectively.

Dyads in which both spouses worked first shift reported significantly less job/family interference than dyads in which men worked first shifts and women worked non-standard shifts. The amount of job/family interference reported by individuals working the same non-standard shift and dyads where women worked first shifts and men worked non-standard shifts was not significantly different from that of individuals both working first shifts.

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CHAPTER I

INTRODUCTION

Statement of Problem

The present investigation focuses on the interdependence of adult roles in the family and those required by the workplace. The basic premise of this investigation is that as the workplace imposes increasing responsibility and time requirements on family members less time is available for the satisfactory performance of family provider roles; namely, those associated with financial, housekeeping, child care, child socialization, sexual, recreation, therapeutic, and kinship.

During the past three decades, the workplace has changed in two fundamental ways. There has been a marked increase in the number of working women and the number of dual wage-earner families. Moreover, the workplace has become increasingly industrialized and production oriented which, in turn, has led to a large segment of the American population, both men and women, working evening or late night shiftwork.

The central problem of the present investigation concerns how these changes in the workplace, which reduce the availability of family members to each other, are associated with perceptions of stress in the functioning of the family.

Background and Rationale of the Problem

The workplace has undergone numerous changes over the past several decades. These changes, no doubt, have influenced how many family roles are performed and how successful individuals are in adequately meeting

family-role demands. Many industries are producing goods on a non-stop, 24-hour operations schedule. This has led to an increasing prevalence of work shifts. Changes in work schedules have paralleled changes in ratios of men to women in the work force. Whereas in the past, the labor force was dominated by males from single-earner families, the dual-earner family has become the rule rather than the exception. The number of dual-earner families has been growing steadily over the last 25 years. According to Hayghe (1981, p. 5):

> By 1968 the number and proportion of dual-earner families about equaled those of traditional earner families (45 percent in each case). Over the ensuing decade, the number of dual-earner families rose by approximately one-quarter, so that by 1978, 51 percent of all married couples were dual-earner families while just 33 percent were of the traditional type.

The increase in dual-earner families has reduced the availability of both husbands and wives to perform family roles and to interact with family members during the work week (Pleck et al., 1978). In addition, increasing industrialization during this century has made shiftwork a major fixture of modern western economies (Agervold, 1976; Maurice, 1975; Walker, 1978; Zalusky, 1978). This, in turn, compounds the problem of the lack of availability of working family members since some dual-earner families are not always fortunate enough to work the same shift.

Presently, over ten million individuals in the United States work schedules other than day shift or the standard shift (Finn, 1981). Roughly one in six full-time, non-farm, wage and salary employees works a shift other than the typical daytime schedule. Although men generally remain overrepresented, in some industries the proportion of women on non-day shifts equals or exceeds that of men (Staines & Pleck, 1983, p. 25).

Researchers, according to Brofenbrenner and Crouter (1982), have treated the impact of work on family life and the job situations of mothers and fathers as separate worlds, having no relation to each other and leading to rather different outcomes. Even when employed females (usually mother) were studied, they were compared to non-working mothers in the areas of child rearing, time spent with children, and discipline of children. The ecological theoretical framework, however, provides a different view of the situation. Brofenbrenner (1979) assumes that interpersonal relationships occur in a more molar context, i.e., the market economy, the workplace, the church, etc., and that humans can only be understood by examining relationships between immediate family environments and wider social environments. In this context, spillover from work could affect family interaction patterns.

Non-standard work schedules for dual wage earners are likely to magnify issues precipitating family conflicts and stresses. These conflicts are magnified in some instances because of lack of physical and emotional contact. The lack of physical contact is the more obvious. Schedule conflicts reduce the amount of time available to the spouse and to other family members to spend together on family-oriented activities. There is usually less time for intimacy because of the unavailability of the spouse. Conflicts in dual-earner family work schedules creates free time for the worker that may not correspond to that of other family members. This outcome leads to free time for one family member when other family members are at work, school, sleeping, etc. These conflicts in scheduling can lead to feelings of isolation and attempts, by the worker, to meet psychological needs outside the family. According to Kanter (1977, p. 31):

> Family routine and events are built around work rhythms (at least more generally than the reverse), just as much of the timing of events in society as a whole, e.g., the opening and closing of stores, which T. V. programs are shown at night, is predicated on assumptions about the hours, days, weeks, and months when people are most likely to be working or not working. The sheer number of hours spent at work as well as which part of the day those hours encompass can influence a large number of family processes through, for example, the effects of fatigue or the availability of the worker to take responsibility for or participate in family events. Whether work related activities extend beyond the formal hours officially devoted to "work" and intrude upon time the family expects can similarly affect the quality of family life. How the hours which workers have for leisure and family synchronize with those of the other family members and the possibilities which society makes available for those hours is another issue. Finally, work which does not permit stable daily rhythms to develop or disrupt daily routines--such as work which involves a great deal of travel--also constrains the possibilities for family organization.

The work by Mott et al. (1965) is considered by some researchers (Hood & Golden, 1979; Staines & Pleck, 1983) as one of the most extensive investigations of shiftwork effects on individual and family functions conducted to date. In this study, Mott et al. (1965) investigated the non-standard shiftworker's ability to participate in a variety of social activities, i.e., playing with children, attending club meetings, shopping, as well as the impact of shiftwork on other family members' schedules and friends' schedules. The study also examined the degree of difficulties and quality of the shiftworker's experiences in performing provider roles. However, this study illustrates some of the problems associated with previous research on shiftwork. Staines and Pleck (1983, p. 26) has described the Mott et al. (1965) study as follows:

> Using a sample of white, male, blue-collar workers in continuous-process industries in the east-central part of the United States, the researchers collected data through questionnaires from day workers and shiftworkers and also from the wives of shiftworkers. The first problem with their study is that workers on nonday shifts (afternoon, night, rotating) were asked to compare their current shift with a steady day schedule in terms of difficulty in engaging

> in various marital and parental activities. Mott's data thus include no analytic comparisons between the work/family interference reported by shiftworkers and day workers, only the judgments of shiftworkers comparing interference under the two types of schedules (and finding it greater under conditions of shiftwork). Second, in their analytic comparisons of levels of work/family interference among the three nonday shifts, Mott et al. performed one-way analyses of variance and omnibus F tests but included no pairwise t tests. As a result, it is unclear which pairs of shifts are significantly different. This study did not take into account the effects of shiftwork on dual-earner families.

Other researchers (e.g., Bast, 1960; Mann & Hoffman, 1960; Maurice & Monteil, 1965; Philip Factories, 1958; Ulich, 1957) reported that shiftworkers complained of work/family conflicts. The majority of the samples, however, were composed of males with wives who were not employed. In addition, these studies were concerned with how physical complaints affected work/family conflict. Studies conducted by Drenth et al. (1976), Mott et al. (1965), and Wyatt and Marriot (1953) recorded the judgments of shiftworkers relating to whether they experienced more work/family strain than they had experienced or would have experienced on a regular daytime schedule. These investigators, however, made no comparisons among the various shift combinations. Still other studies compared shiftworkers and daytime workers using such small samples that the sample size ruled out statistical generalization (e.g., Hood & Golden, 1979; Lein et al., 1974).

More recent studies (Booth, 1979; Greenhaus & Kopelman, 1981; Hood, 1979; Staines & Pleck, 1982; Piotrkowski & Crits-Christoph, 1979) have suggested that the wife's employment status and family life cycle stage have a direct affect on the husband's work schedule and are likely to affect their family relations. However, these studies were mainly concerned with the effects of the wife's work hours on the husband's total work/family

conflict rather than what work combination for dual-earner couples presented the greatest amount of family stress.

It becomes apparent that the issue of shiftwork relating to dual-earner couples is an area that needs further research. Most of the studies that have dealt with shiftwork effects on individual and family behavior have been limited in several respects. Women and minorities have been excluded and/or underrepresented in many of the previous studies (Hood, 1979; Mott et al,, 1965; Piotrkowski & Crits-Christoph, 1979). Further, much of the previous research has not focused on the effects of both spouses/partners working shifts, and in many instances, different shifts.

Purpose of the Present Investigation

The purpose of the present study is to: (1) investigate the effects of shiftwork combinations of dual-earner dyads on subjects' perceptions of family role strain and family management strain in their families; and (2) investigate demographic factors such as age, race, sex, and income as they are associated with shiftwork effects on role and management strains. Results of previous research investigations suggest that incongruence in work schedules for dual-earner couples increases family stress. The present study is designed to circumvent some of the weaknesses of previous studies by including males, females, and minorities. This study also investigates shiftwork effects for various shift combinations (e.g., husband working first shift and wife working third shift) in addition to male-female differences associated with shiftwork.

Research questions addressed by the study are as follows:

1. Is there a significant difference in perceptions of family stress between dyads working the standard shift (both husband and wife first shift) and dyads working the same non-standard shift?
2. Are there significant differences in perceptions of family stress between dyads who work different shifts (incongruent) and dyads working the same shift (congruent)?
3. Are there significant differences in perceptions of family stress among dyad members depending on which member works the standard versus non-standard shift? (Example: Husband first, wife second versus wife first, husband second)
4. Do wives perceive more family stress over all shifts than husbands?
5. What combination of shiftwork schedules produce the least amount of perceived family stress among wives and husbands?
6. Are significant differences in perceived family stress associated with selected demographic variables; namely, sex, education, age, number of children, and sex-role perceptions (traditional versus liberal) in each of the various shift combinations for wives and husbands?

Hypotheses

1. Husbands and wives both working day shift (standard shift) perceive less family stress than husbands and wives both working non-standard shifts.
2. Husbands and wives both working the same non-standard shift perceive more family stress than husbands and wives working a standard shift

but less family stress than husbands and wives working different shift combinations.

3. Husbands and wives working different non-standard shifts perceive the greatest amount of family stress.
4. Wives perceive more family stress over all shifts than husbands.
5. The more traditional one or both members of the dual-earner couple is in sex-role preference, the greater the perceived level of family stress.

CHAPTER II

REVIEW OF LITERATURE

Although the major purpose of this investigation focuses on perceived shiftwork effects on the family, the majority of previous research has involved studying behavior and development of the individual principally in the areas of physical and psychological consequences of shiftwork. As such, a major portion of the research reviewed focuses on these issues.

The world of work has a profound affect on families. It not only influences the family's economic conditions but also affects the physical and emotional well-being of each individual family member. The workplace cannot be totally separated from the home. Changing work patterns over the last half century have contributed greatly to the overlap of home and work. Pleck and Staines (1981, p. 10) characterized this situation in the following manner:

> No assessment of recent trends in American work life can ignore certain major shifts in the composition of the labor force. Over the past twenty-five years, according to A. R. Miller's (1978) review of changing work patterns, there have been substantial changes in the proportion of the population engaged in market work and in the demographic composition of the work force. The nonworker-worker ratio has fluctuated widely, primarily as a reflection of the dramatic fluctuations in birth rates. Since 1965, for example, the ratio of nonworkers to workers have fallen precipitously, as would be expected given the declining birth rate. In addition, the long-term trends of increasing participation by women and the declining years of work by men have accelerated. Specifically, young women appear to have been returning to the labor market much more quickly after the birth of their children with a consequent reduction in their time out of the work force, and the customary retirement age of men have been falling. As a result, work-like patterns are becoming increasingly similar for men and women.

The prevalence of families in which both husband and wife work for pay has increased over the last several decades. According to Hayghe (1981, p. 5):

> By 1968 the number and proportion of dual-earner families about equaled those of traditional earner families (45 percent in each case). Over the ensuing decade, the number of dual-earner families rose by approximately one-quarter so that by 1978, 51% of all married couples were dual-earner families while just 33 percent were of the traditional earner type.

The increase in dual-earner families has also increased the number of workers working shifts (Hedges & Sekscenski, 1979). In the past the majority of working families were traditional in nature. Today, however, the dual-earner couple represents the typical working family. Problems were related to shiftwork when the workers were basically traditional in the family makeup. Nevertheless, in dual-earner families with both spouses working shiftwork and in many instances different shifts, the opportunities for physical and emotional stresses and conflicts are increased.

Physical Health and Shiftwork

Physical health and shiftwork has been investigated most often in relationship to night work and the worker's physical health. Conclusions regarding physical health and shiftwork have been varied.

Shiftwork is often assumed to harm the health of workers (Koller, Kundi, & Cervinka, 1978; Shostak, 1966) although other researchers have reported no statistically significant differences in the health of shift-workers and non-shiftworkers (Aanonsen, 1966; Dirken, 1966; Swenssen, 1971; Thii-Evensen, 1958).

Mott et al. (1965), using a sample of 1045 male shiftworkers, reported two contradictory sets of findings bearing on the physical effects of shiftwork. These researchers first reported difficulties with the time-oriented body functions--sleeping, eating, and bowel movements--as related to the shift of the worker. More workers on the steady night shift and rotating shift reported difficulties in adjusting these body functions to the requirements of their shift. In addition, a higher proportion of night and rotating shiftworkers reported being fatigued much of the time, that their appetites were dulled, and that they were constipated much of the time. Despite the fact that these symptoms were reported more on night and rotating shifts, more serious ailments were more prevalent among day and afternoon shiftworkers. The prevalence of ulcers was highest for the day and afternoon shiftworkers as were complaints about general health. Mott et al. (1965) explained these findings as an indication of the fact that shiftworkers who have experienced serious physical problems had used these problems as a reason to get a transfer to the day shift. This finding is similar to Akerstedt's (1977) review of literature on physical health and shiftwork.

Dirken (1966) attempted to determine whether shiftwork was related to a decrease in physical well-being and to identify specific complaints of shiftwork. Using a Dutch sample of approximately 600 shiftworkers and 1200 non-shiftworkers, the researcher gathered data through the use of an inventory developed and validated by Dutch industries. It was concluded in this investigation that to a certain degree a stereotyped pattern of complaints about nervousness and gastrointestinal disorder occurs more frequently for shiftworkers than for non-shiftworkers. However, the

data did not substantiate actual physical problems for the respondents. There was, nonetheless, a significant decrease in general well-being for shiftworkers. This difference was smaller after the elimination of influences originating from environmental load and aging but the slight influence of shiftwork, though not specific, remained. Several other investigations where shiftworkers were interviewed have led to the conclusion that shiftwork often results in a decrease in physical well-being due to such things as disturbance to sleep, nervousness, and digestive disorders (Agnonsen, 1964; Banning et al., 1961; Brown, 1957; Ulich, 1957).

A limitation of many previous studies is that data obtained from workers were gathered through the use of self-report (Jamal & Jamal, 1982; Koller et al., 1978). This self-reporting in most instances required subjective evaluations on the part of the workers. There exists a distinct possibility that the resulting data has been contaminated due to the lack of objective measures of actual health problems.

Detrimental health effects on human efficiency might ensue from at least four sources: 1) lowered state of physical and mental health in workers; 2) effects of motivation (Wedderburn, 1967); 3) vulnerability of efficiency at certain kinds of tasks to total or even partial sleep deprivation (Wilkinson, 1965; Wilkinson et al., 1966); 4) human efficiency, particularly in mental tasks, something which itself varies in a systematic manner, and sometimes according to the time of day or night.

Shiftwork has been viewed by researchers (Colquhoun, 1970; Finn, 1981; Mott et al., 1965) as a possible disrupter of bodily or circadian rhythms particularly in the areas of sleep and physiological processes.

Disruption in circadian rhythms has been studied in sleep laborabory experiments (Blake, Edwards, & Colquhoun, 1968, 1969). The resultant findings have indicated that workers differ in their ability to adjust bodily rhythms to non-traditional work schedules.

A follow-up study by Colquhoun et al. (1968) to an earlier investigation of four-hour workshifts (1968) attempted to determine whether the relation between efficiency on mental tasks and circadian rhythms of the body temperature was affected by an increase in the length of duty from four hours to eight hours. Subjects were divided into a day shift (control group), a night shift, and a morning shift. The subjects were tested 12 consecutive days on the same shift. The day shift subjects showed no consistent effects of fatigue due to an increase in work time. Adaptation of temperature rhythms to work on the night shift was partial, but was relatively closely reflected in the record performance trends. Morning shift (4:00 a.m. - 12:00 p.m.) workers showed very little adaptation, and performance appeared to have been affected by partial sleep deprivation. The researchers concluded that body temperature was an effective predictor of overall mental efficiency in most industrial-type shifts.

Torbjorn, Akersledt, and Torsvall (1981) investigated sleep length and subjective rating of sleep quality for workers on different shifts in a three-shift system in an attempt to relate inter-individual differences to possible causative factors. A sample of 390 steel workers drawn from three-shift, two-shift, and day work systems filled out a questionnaire on work hours and well-being. The results indicated that for three-shift workers sleep quality was best and longest when the

workers were on an afternoon shift followed by the morning shift and then the night shift. The two-shift workers reported almost identical information. However with increasing age and experience of shiftwork, sleep quality and length of sleep was reduced. Sleep patterns were highly correlated with age. Variables such as marital status, number of children, and housing condition did not have any predictive value. Further, neuroticism or extroversion had no predictive value. The researchers reported that over age 45, sleep quality and sleep length in connection with the night shift decreased with increased experience of shiftwork. The researchers suggested that increased night shift difficulties were related to changes in circadian physiology and speed of recuperation.

Psychological Effects of Shiftwork

There is also evidence to suggest that shiftwork affects the worker psychologically. Psychological stresses in many instances manifest themselves as physical symptoms and/or complaints. Kanter (1977) identifies five facets of work that are important in shaping and influencing the family. The first of these is the amount of time spent at work or on work and the scheduling of that work. Time spent at work or on work-related matters cannot be devoted to family concerns. The second is "reward and resources". According to Crouter, Huston, and Robins (1983), "Income derived from working is the primary determinant of a family's material well-being and social prestige." Kanter's third category is occupational "world view", or the way in which a job shapes a worker's conception of the world, including rules of conduct inside and outside the workplace, values for self and family members, and even

leisure interests. Kanter's fourth category is "absorption or the involvement of the workers in mental preoccupation (i.e., overtime or bring home work)". Kanter's fifth category is described as "emotional climate", the daily experience that generates the various moods such as stress, satisfaction, and fatigue that are in turn brought home by the worker.

Mott et al. (1965) reported that the greater the interference felt by the worker across all his roles and activities, the lower his self-esteem and the higher his anxiety and conflict-pressure. Further, difficulties encountered in the roles of father and husband or in engaging in social activities were by-products of shiftwork and related to the criteria of psychological health. Keith and Schafer (1980), using a sample of 135 two-job families, examined factors associated with work/family role strain and depression. The results indicated that, in general, time demands both in the home and workplace, and stage in life cycle, influenced the role strain of both sexes. Role strain, feelings of deprivation at home, deprivation at work, and involvement in "feminine" household tasks were linked to male depression. Women in this study reported being depressed if they evaluated their financial situation negatively and perceived their husbands as inadequate providers. Mott et al. (1965) concluded that both sexes may be somewhat disadvantaged by traditional attitudes toward the role of provider.

Burke and Weir (1976) also reported husbands of employed women to be in poorer health and less content with their marriages than men whose spouses were not in the labor force. The sample, however, consisted of engineers and accountants making generalization to other socio-economic categories impossible.

Booth (1979) replicated Burke and Weir's study (1976) with different results. Booth reported that husbands of employed women evidenced no more signs of marital discord and stress than spouses of housewives. Staines et al. (1978) found that wives' employment does not affect husbands' reports of marital adjustment.

Psychological spillover occurs for families in the areas of physical contact and limited time together. Family members have their own priorities and schedules, and since society makes certain times appealing, timing becomes important in determining the effects of working hours (Lein et al., 1974; Piotrkowski, 1979). Piotrkowski (1979) further suggests that family participation avoidance happens if psychosocial needs are satisfied through work making family interaction less important to the individual.

Ridley (1973) investigated the impact of work satisfaction and involvement on marital interaction when both parents were employed. The sample was drawn from all public schools in Tallahassee, Florida. The sample included married female teachers and their husbands. A total of 210 useable questionnaires (68.6 percent return) were returned by the teachers and 109 useable questionnaires (52.9 percent return) were returned by the husbands. Total scores were obtained for each respondent on the job satisfaction scales, job involvement scale, and the marital adjustment scale. On the basis of the total scores, cut-off points were established to place respondents into low, medium, or high categories in each of the above categories. Higher marital adjustment was reported when wives were low on job satisfaction and their spouses were high on job satisfaction. Another combination producing higher

marital adjustment was when both spouses were highly satisfied with their jobs. Marital adjustment was highest when: 1) husband and wife were low on job involvement; and 2) the husband was medium on job involvement and the wife was low on job involvement. When either spouse was highly involved in his job, marital adjustment tended to decrease. A limitation of this study was sample size and the skewedness toward upper social occupation made generalization difficult.

Some researchers report findings of marital satisfaction being more sensitive to husbands' than wives' job satisfaction and that both husbands' and wives' work roles must be considered (Bailyn, 1970; Ridley, 1973; Piotrkowski & Crits-Christoph, 1981). However, professional and non-professional women complain of insufficient time with family members (Burke & Weir, 1976; Heckman et al., 1971; National Council on Working Women, 1979; Rappoport & Rappoport, 1971; Walshok, 1979).

Shiftwork and Family Well-Being

Physiological and psychological problems are not the only problems that shiftworkers encounter. The non-traditional work schedule also has an affect on the worker's family well-being. The hours of work of mothers and fathers, or husbands and wives, determine the hours parents are available to children and the time that spouses are available to each other. Family conflicts can be magnified even more when both members of the couple are wage earners (Pleck et al., 1980). The reduction of physical contact is one of the more obvious results of non-traditional work schedules for working couples. Schedule conflicts reduce the amount of time available for family members to spend time together. Piotrkowski (1979) focused directly on the nature of the work/family

conflict in a study of 13 working-class and lower-class families. Her study characterized three categories in which work spills over into family life through mood, actions, feelings, and energy levels of the worker parents. These three categories were negative carry-over, positive carry-over, and energy deficit. She further argued that the work experience is brought into the family via the worker's emotional state which partially determines the person's availability to family members, especially children. A major limitation of this study was that the small sample size made generalization impossible.

Pleck et al. (1978) analyzed the items from the 1977 Quality of Employment Survey (QES) that attempted to ascertain the extent to which parents perceive "interference" between job and family. The researchers reported that the degree to which parents experience such conflicts was negatively correlated with family adjustment, job satisfaction, and sense of well-being. The researchers reinforced the notions that schedule incompatibilities and psychological spillover from work to the family are the two most common sources of work/family interference.

Mott et al. (1965), using a sample of 1045 male workers on four work schedules (day shift, evening shift, night shift, rotating shift), found afternoon shiftworkers reporting the most difficulties in the role of father and diverting the wife from household duties. A large portion of this group reported not having time to spend with children in that they left for work before the children returned from school and was asleep when the children left for school. The night-shift worker reported even more difficulty than the afternoon-shift worker in role performance usually associated with the later evening hours (i.e.,

sexual relations and protecting wife from harm). In addition, the shift-workers reported belonging to fewer organizations and clubs than did day workers across age and educational level. The Mott et al. (1965) study included no minorities or females. The researchers further asked workers on non-day shifts to compare their present shift with a standard shift in terms of engaging in various marital and parental activities. The study was not concerned with the effects of shiftwork on dual-earner couples.

Bohen and Viveros-Long (1981) used what they perceived as a natural experiment to study the effects of flexible work schedules (flexitime) on family life, particularly family stress, by attempting to measure family role strains and family management strain along with the amount of time spent working around the house and the perceived equity in the time factor. Two federal agencies similar in size and staff personnel, doing similar work, were the sources of subjects. In one agency, the worker worked conventional hours, from 9:00 a.m. to 5:00 p.m. In the other agency, the employees could choose to arrive within a two-hour range in the morning and adjust their leaving-time accordingly. At each agency, the survey sample included slightly more men than women. Workers in the survey estimated the amount of time they spent in two family roles (child care and housework) during work days and off days. The researchers then estimated the average weekly hours spent on each role. Bohen and Viveros-Long also included measures of the division of domestic labor for both husbands and wives--percentage of total child care, and separately, total amount of housework performed by the worker (as compared to the spouse), family role strain, family management strain, and job satisfaction.

The results indicated that measures of family strains and participation in home activities were significantly different favoring flexitime primarily for one group of families--those without children. Although fathers with unemployed wives did report less stress in family management if they were on flexitime, Bohen and Viveros-Long pointed out that families with children and dual career couples are under so much pressure that the modest flexitime arrangement under study may not have gone far enough to meet their needs.

Several other studies investigated levels of work/family interference reported by shiftworkers (including day workers). Young and Willmott (1973) asked husbands in a London sample whether their work interfered with their family life. The researchers reported that the majority of the shiftworkers (52%) stated yes, compared to 34% of the weekend workers and 27% of other workers. House (1980) studied the effects of shiftwork among a population of non-managerial factory workers. However, his index of job/non-job conflict included only three items, and only one of these asked about work/family strain (Pleck et al., 1981). Based on the analysis of the sample composed of white males, the researcher reported a significantly positive relationship between shiftwork (generally the 3:00 p.m. - 11:00 p.m. shift) and job/non-job conflicts, even after the imposition of multivariate controls. Tasto et al. (1978), using two samples including females, analyzed data from food processors (71% male) and nurses (98% female). Shiftworkers reported significantly more interference than other workers between their work hours and their sexual activities. Night shiftworkers reported the most interference followed by rotating shiftworkers,

afternoon shiftworkers, and workers on day shift. Every non-traditional shift reported significantly less satisfaction with the amount of time spent with their spouse than workers on a traditional work schedule. The only evidence casting doubt on the negative effects of shiftwork on family life is reported in a study where employees work the shift of their choice (de la Mare & Walker, 1968).

Summary

Shiftwork is usually associated with negative consequences on the lives of workers (Aldous, 1969; Brown, 1959; Finn, 1981; Mott et al., 1965). Pleck, Staines, and Lang (1980), in analyzing the 1977 Quality of Life Survey, suggest that a substantial minority of workers living in families experience conflict between work and family life. These conflicts most often concern excessive work time, work schedule, fatigue, and irritability caused by work. Parents reported more conflicts than others. There were no differences in the amount of conflict reported although the kinds of conflicts reported were different. Research findings point to three major areas of interference of shiftwork on workers' lives: physiological (Aanonsen, 1964; Banning et al., 1961; Colquhoun, 1968a, 1968b, 1969; Koller & Cervinka, 1978; Weich, 1957); family life (Bohen & Viveros-Long, 1981; House, 1980; Mott et al., 1965; Pleck et al., 1980; Staines et al., 1981; Young & Willmott, 1973); and psychological (Burke & Weir, 1976; Keith & Schafer, 1980; Mott et al., 1965; Piotrkowski, 1979). Several studies have reported contradictory results about the overall negative effects of shiftwork (Aanonsen, 1966; Booth, 1979; Dirken, 1966; Staines et al., 1978). Researchers continue to agree that there exists a need for additional

studies on shiftwork taking into account methodological problems associated with previous studies (Bohen & Viveros-Long, 1981; Crowder, Huston, & Robins, 1983; Staines & Pleck, 1983).

CHAPTER III

RESEARCH METHODS

Survey Sample

Three hundred thirty-one hourly-wage earners were non-randomly selected from industries based in Rockingham County, North Carolina. To be included in the final data analysis, subjects were required to work on a permanent, fixed shift and to be currently living with an employed spouse/partner on a permanent work schedule. The job, however, did not have to be with an industry. Examples of jobs for spouses other than industry-related jobs were nurses (8 hour shift), secretaries (8:30 a.m. - 5:00 p.m.), or store clerks (9:00 a.m. - 6:00 p.m.). A second criteria for inclusion in the data analyses was that the couple had to have at least one child under 18 living at home. Industries utilized for the sample fell under the broad category of factories which mass produce various products for public use. Examples of products made by these industries included cloth goods, plastic products, cigarettes, electrical components, and processed chicken. Seventeen subjects' responses were not analyzed due to failures of these subjects to meet the criteria required for inclusion in data analyses. The final sample included 314 subjects: 88 males and 226 females (see Table 1).

Other demographic characteristics of subjects in the four shift combinations tended to be similar in most respects, i.e., average number of children, average number of hours worked, individual incomes, and

Table 1

Demographic Characteristics of the Respondents by Shift Combination

Respondents	Shift Combination*					
	1	2	3	4	5**	Total
Numbers						
Women	49	35	93	27	22	226
Men	28	20	11	27	2	88
Blacks	24	20	21	16	5	86
Whites	53	35	83	38	19	228
Total	77	55	104	54	24	314
Average Age	33.10	29.95	31.30	32.98	33.83	32.23***
Average No. of Children	1.78	1.64	1.85	1.60	1.83	1.74***
Average No. of Hours Worked	41.68	41.33	41.73	42.21	42.21	41.83***

*Shift Combination (see below)

1 = husband/wife 1st shift
2 = husband/wife both same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift
5 = husband/wife both non-standard but different shift

** Information deleted for all subsequent tables

***Denotes averages over all shifts

average ages. In each shift combination, women respondents outnumbered men and, as can be seen in Table 2, women reported achieving slightly higher levels of education than men. The individual income range most often reported by respondents (58.5%) was $10,000 to $14,999. However, a considerably larger percentage of men (23%) than women (3%) reported incomes exceeding $20,000 (see Table 3). Appendix C includes sex-by-shift combination summaries of the numbers and ages of children under 18 years living at home, as well as a breakdown of the number of hours worked per week and the length of time respondents had worked their present shift.

Procedure

Personnel directors from industries in Rockingham County were contacted by telephone. The researcher requested permission to survey willing dual-earner couples on how family life was affected when both husband and wife worked shifts, and in some cases, different shifts. One industry with seven different plant locations was very interested in the study and allowed employees (n = 271) to use company time to complete the survey. Other industries expressed interest in the project but only allowed participants to complete the survey on their own time. Participants were greeted by the researcher and/or an assistant in an area provided by the industries. Each individual was given a letter explaining the purpose of the investigation and why the researcher was interested in dual-earner couples. Once the letter requesting participation was read, willing respondents were asked to complete a self-administered questionnaire. Only subjects who had a spouse that worked and had children under 18 living at home were used in the

Table 2

Number and Percentages of Male and Female Respondents

for Shift Combination by Levels of Education

	Shift Combination*							
	1		2		3		4	
Education	Female	Male	Female	Male	Female	Male	Female	Male
8th grade or less	1 (2.0)**	3 (10.7)	2 (5.7)	1 (5.0)	-	-	-	1 (3.7)
Some high school, but didn't finish	12 (24.5)	6 (21.4)	4 (11.4)	6 (30.0)	35 (37.6)	1 (9.1)	8 (29.6)	4 (14.8)
High school grad./ GED	31 (63.3)	10 (35.7)	23 (65.7)	9 (45.0)	48 (51.6)	5 (45.5)	14 (51.9)	12 (44.4)
Some college	5 (10.2)	9 (32.1)	6 (17.1)	4 (20.0)	4 (4.3)	3 (27.3)	5 (18.5)	8 (29.6)
College graduate or more	-	-	-	-	1 (1.1)	2 (18.5)	-	2 (7.4)
Total	49 (100)	28 (100)	35 (100)	20 (100)	93 (100)	11 (100)	27 (100)	27 (100)

* Shift Combination

1 = husband/wife 1st shift
2 = husband/wife both same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift

** Percentages in parentheses

Table 3

Numbers and Percentages of Male and Female Respondents for Shift Combination by Salary Ranges

	Shift Combination*							
	1		2		3		4	
Salary	Female	Male	Female	Male	Female	Male	Female	Male
Less than $5,000	-	-	-	-	3 (3.3)	-	-	-
$5,000 to $9,999	4 (8.3)**	1 (3.8)	13 (41.9)	3 (15.0)	17 (18.7)	-	4 (16.7)	2 (8.3)
$10,000 to $14,999	38 (79.2)	19 (73.1)	14 (45.2)	13 (65.0)	61 (67.0)	3 (30.0)	16 (66.7)	8 (33.3)
$15,000 to $19,999	5 (10.4)	1 (3.8)	1 (3.2)	3 (15.0)	8 (8.8)	4 (40.0)	4 (16.7)	3 (12.5)
$20,000 to $24,999	1 (2.1)	-	1 (3.2)	-	1 (1.1)	2 (20.0)	-	7 (29.2)
$25,000 to $29,999	-	2 (7.7)	1 (3.2)	1 (5.0)	1 (1.1)	1 (10.0)	-	3 (12.5)
$30,000 +	-	3 (11.5)	1 (3.2)	-	-	-	-	1 (4.2)
Total***	48 (100)	26 (100)	31 (100)	20 (100)	91 (100)	10 (100)	24 (100)	24 (100)

* Shift Combination

1 = husband/wife 1st shift
2 = husband/wife same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift

** Percentages in parentheses

***Subjects who declined to list salary were excluded from count and percentages

analyses. The questionnaires, which required approximately 20 minutes to complete, were collected on the same shift they were distributed.

Instrumentation

Research participants were asked to complete an instrument containing questions on job/family role strains and job/family management strains taken from the research measures of Bohen and Viveros-Long (1981) and a measure of sex-role perceptions taken from research by Scanzoni (1980) and reported by Kingsbury (1983).

Family Stress Scales

Bohen and Viveros-Long's (1981) family stress scales are a component of a three-part survey instrument used to gather information about flexitime. The three-part instrument measured: 1) family stress; 2) family work; and 3) family equity. Each measure had separate and distinct scales. The job/family role strain and the job/family management strain scale comprised the family stress scale.

There was some modification in the wording of the directions to the Bohen and Viveros-Long scales to enhance comprehension. Subjects in a pre-test sample survey had some difficulties in understanding the working of the directions.

The initial validity of the two scales (Bohen & Viveros-Long, 1981, p. 236-239) was established by a review of the items by a panel of six judges (two psychologists, a sociologist, and three federal personnel experts) who rated the items according to how well they tapped the content designated for the scale. Items which were approved by this process were included in the scales for pre-testing. In pre-test form the

reliabilities of the two scales were as follows: role-strain scale, alpha coefficient of = .71; family-management scale, alpha coefficient = .93. Concurrent validity was established by correlating respondents' scores on each scale with their scores on a set of predictor variables. Positive relationships were found between the degree of role strain and the number of hours worked by the respondent, the length of time spent commuting, and the number of hours worked by the respondents' spouses. Similar results were found for the relationship with the family-management scale. In the final test form, the reliability coefficient for the family role-strain scale was .71. The reliability coefficient for the family-management scale was .91. Concurrent validity for the scales in the final form were similar to those obtained in the pre-test. Criterion validity could not be established for the scales due to the scales directly addressing feelings about the intersections between two life areas which traditionally have been studied separately, namely family and work. Using factor analyses, construct validity was determined. The total family-management scales factored into four clusters. Sixty-four percent of the variance appeared in the first factor. The second factor explained 14 percent of the variance. Factor three explained 10 percent of the variance. Factor four explained 7 percent of the variance and factor five explained 5 percent of the variance. The results of the factor analyses were in accord (Bohen & Viveros-Long, 1981, p. 244) with the general theories and hypotheses of the study:

> First that parents with direct child care responsibilities would feel significant amounts of stress relative to balancing their family and job responsibilities; and second, that family events and routines are built around work rhythms, and people's ease or difficulty in interacting with or on behalf of other family

members depends in part on work schedules which define when the person may or may not be present on the job.

To establish construct validity for the job/family role strain scale, it was predicted that the scale items would factor into approximately the six Komarovsky modes (Bohen & Viveros-Long, 1981). The items did not factor perfectly into these six modes; but the three versions of the scale did have factorial clusters which coincide with five of the six modes. For the total role strain scale, four factors were identified. According to Bohen and Viveros-Long (1981), 66 percent of the variance appeared in the first factor and the relevant items were all in Komarovsky's overload mode 6 (physically and emotionally draining items). The second factor, mainly Komarovsky's mode 5 (difficulty balancing job and family), explained 18 percent of the variance. Factor three, which emphasized mainly worry and logistical problems related to child care, explained 9 percent of the variance. Factor four, which picked up several additional overload issues (feeling rushed and having too much to do comfortably), explained 7 percent of the total variance.

High mean family management strain scores and family role strain scores indicate high levels of reported management strain and role strain.

Sex-Role Preference Inventory

The sex-role preference inventory developed by Scanzoni (1980) measures utilities, goals, interests, rewards, cost, division of labor, and sex stratification, etc., associated with traditional family values. The items that comprised the scale have been shown in previous research to be valid and reliable indicators of the sex-role preferences of husbands and wives (Scanzoni, 1975, 1978; Tomeh, 1978).

Scanzoni (1975) reported the results of factor analysis on a number of sex-role preference items and indicated that the dimensions which emerged were the "traditional wife" role, "wife's self-actualization" role, "problematic husband alterations" role, "institutionalize equality" role, "traditional husband" role, and "traditional mother" role. Selected items from these identified categories were included in the sex-role preference inventory. According to Scanzoni, the items possessed considerable face validity as well as conceptual and theoretical validity. The predictive validity of these items was supported by a 1975 follow-up study of a 1971 study on sex-role and women's work (Scanzoni, 1978). Using the sex-role preference items, Scanzoni predicted that after four years (1971 - 1975) women would report more sex-role modernity than they had previously reported. His predictions were validated. On each of the sex-role dimensions, as identified by factor analysis, the women reported significantly greater non-traditional preferences in 1975 than in 1971.

Tomeh (1978) tested the reliability of these items by correlating each item to the total score of a given scale and reported coefficients of reproducibility equal to .84 for the non-traditional wife-mother role items, .85 for the non-traditional husband-father role items, and .84 for the problematic husband-wife alterations role items.

Higher mean scores indicate non-traditional attitudes toward sex-role preference. Lower mean scores indicate traditional attitudes toward sex-role preference.

Additional information derived with the survey instrument include job satisfaction (item 16), demographic variables (items 1, 2, 3, 4),

shift worked (items 10, 12), income (item 7), educational level (item 6), and number of children under 18 living at home (item 5).

Operational Definition of Shift Variables

Standard shift included starting times from 6:00 a.m. through 9:00 a.m. Evening shift included starting times from 2:00 p.m. through 5:00 p.m. Night shift included starting times from 10:00 p.m. through 12:00 midnight. These shifts generally consist of 8-hour work days.

Data Analyses

The responses to questions in the survey instrument were placed into a file of the VAX computer system. Analyses were conducted using SPSS-X programs--descriptives, frequencies, distributions, analysis of variance and regression procedures.

An average score for each subject was obtained for the job/family role strain scale by adding the number circled in each of the statement items (18 and 21) and dividing by the total number of items. An average score for each subject was obtained for the job/family-management scale by using the same methods (17 and 22). The higher the score, the greater the job/family role and management strain experienced by the worker.

The total score of these two measures comprise the scores of the two dependent variables, job/family role strain and job/family management strain.

An average score was also obtained for each subject for the independent variable sex-role preference by adding the circled numbers in each of the statement items (25) and dividing by the total number.

Data analysis was conducted in two phases. Phase one consisted of a two-way analysis of variance (ANOVA). The factors in the two-way ANOVA consisted of sex of respondent and the shift worked by the respondent in conjunction with his/her spouse. Scheffe's method was employed to determine significance among the mean scores.

Initially, the shiftwork factor involved five categories. Shift combination number 1 consisted of males and females who worked first shift. Shift combination number 2 consisted of males and females who worked the same non-standard shift (2nd and 2nd, 3rd and 3rd). Shift combination number 3 consisted of males who worked first shift while the females worked a non-standard shift. Shift combination number 4 consisted of females who worked first shift and males who worked non-standard shifts. Shift combination number 5 consisted of males and females who worked different non-standard shifts (2nd and 3rd, 3rd and 2nd). It was expected that an adequate number of respondents would cluster into each of the five shift combinations. However, shift combination number 5 included only two males and was deleted from all analyses. Due to the deletion of shift combination number 5 from all analyses, hypothesis three was not tested.

The second phase of data analysis consisted of multiple regression techniques. The dependent variables (family management strain and family role strain) were regressed onto the independent variables age, sex, sex-role perceptions, education, and number of children under 18 years old living at home. The final research questions addressed through multiple regression procedures from the collected data focused on the relative contribution of the shift factor to family stress when

other predictor variables, e.g., income and number of children under 18 living at home, were controlled.

CHAPTER IV

RESULTS

Characteristics of the sample and major findings of the study are presented below:

Descriptive Findings Relating to Respondents' Job Satisfaction

Respondents in all shift combinations reported similar degrees of satisfaction with their jobs. As can be seen in Table 4, most respondents were satisfied or very satisfied with their jobs. In contrast, many respondents reported being dissatisfied or very dissatisfied with their pay (see Table 5). This was most apparent in shift combination 1 where 46.9% of women and 25.0% of men were dissatisfied or very dissatisfied with pay. In all shift combinations, one-third or more of the respondents were dissatisfied or very dissatisfied with their pay.

Respondents in the various shift combinations were also similar in the degree of expressed dissatisfaction with the shift worked and the number of hours worked. As can be seen in Table 6, a majority of individuals in each shift combination (more than 65%) were either satisfied or very satisfied with the number of hours worked. Both men and women respondents working the day shift (shift combination 1) tended to be more satisfied (men 89%, women 88%) than respondents in all other shift combinations (shift combination 2, women 71%, men 80%; shift combination 3, women 81%, men 91%; shift combination 4, women 67%, men 96.3%).

Table 4

Numbers and Percentages of Male and Female Respondents by Shift Combination for Levels of Job Satisfaction

	Shift Combination*							
	1		2		3		4	
Job Satisfaction	Female	Male	Female	Male	Female	Male	Female	Male
Very satisfied	4 (8.2)**	5 (17.9)	4 (11.4)	2 (10.0)	14 (15.1)	1 (9.1)	3 (11.1)	8 (29.6)
Satisfied	23 (46.9)	16 (57.1)	22 (62.9)	11 (55.0)	57 (61.3)	6 (54.5)	15 (55.6)	17 (63.0)
Neither satisfied or dissatisfied	11 (22.4)	7 (25.0)	6 (17.1)	5 (25.0)	18 (19.4)	4 (36.4)	6 (22.2)	2 (7.4)
Dissatisfied	9 (18.4)	-	2 (5.7)	2 (10.0)	3 (3.2)	-	2 (7.4)	-
Very dissatisfied	2 (4.1)	-	1 (2.9)	-	1 (1.1)	-	1 (3.7)	-
Total	49 (100)	28 (100)	35 (100)	20 (100)	93 (100)	11 (100)	27 (100)	27 (100)

* Shift Combination

1 = husband/wife 1st shift
2 = husband/wife same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift

** Percentages in parentheses

Table 5

Numbers and Percentages of Male and Female Respondents for Shift Combination by Satisfaction with Pay

	Shift Combination*							
	1		2		3		4	
Pay	Female	Male	Female	Male	Female	Male	Female	Male
Very satisfied	1 (2.0)**	3 (10.7)	2 (5.7)	1 (5.0)	4 (4.3)	1 (9.1)	1 (3.7)	3 (11.1)
Satisfied	12 (24.5)	8 (28.6)	7 (20.0)	8 (40.0)	40 (43.0)	3 (27.3)	6 (22.2)	14 (51.9)
Neither satisfied or dissatisfied	7 (14.3)	10 (35.7)	11 (31.4)	4 (20.0)	21 (22.6)	2 (18.2)	6 (22.2)	5 (18.5)
Dissatisfied	23 (46.9)	5 (17.9)	12 (34.3)	6 (30.0)	22 (23.7)	4 (36.4)	10 (37.0)	5 (18.5)
Very dissatisfied	6 (12.2)	2 (7.1)	3 (8.6)	1 (5.0)	6 (6.5)	1 (9.1)	4 (14.8)	-
Total	49 (100)	28 (100)	35 (100)	20 (100)	93 (100)	11 (100)	27 (100)	27 (100)

* Shift Combination

1 = husband/wife 1st shift
2 = husband/wife same non-standard shift
3 = husband 1st/wife non-standard shift
4 = wife 1st/husband non-standard shift

** Percentages in parentheses

Table 6

Numbers and Percentages of Male and Female Respondents for

Shift Combination by Satisfaction with the Number of Hours Worked

	Shift Combination*							
	1		2		3		4	
Hours Worked	Female	Male	Female	Male	Female	Male	Female	Male
Very Satisfied	8 (16.3)**	4 (14.3)	5 (14.3)	2 (10.0)	5 (5.4)	3 (27.3)	3 (11.1)	5 (18.5)
Satisfied	35 (71.4)	21 (75.0)	20 (57.1)	14 (70.0)	71 (76.3)	7 (63.6)	15 (55.6)	21 (77.8)
Neither satisfied or dissatisfied	2 (4.1)	2 (7.1)	5 (14.3)	3 (15.0)	8 (8.6)	-	4 (14.8)	-
Dissatisfied	3 (6.1)	1 (3.6)	2 (5.7)	-	7 (7.5)	1 (9.1)	3 (11.1)	1 (3.7)
Very dissatisfied	1 (2.0)	-	3 (8.6)	1 (5.0)	2 (2.2)	-	2 (7.4)	-
Total	49 (100)	28 (100)	35 (100)	20 (100)	93 (100)	11 (100)	27 (100)	27 (100)

* Shift Combination

1 = husband/wife 1st shift
2 = husband/wife same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift

** Percentages in parentheses

Larger percentages of respondents reported being satisfied or very satisfied with their work schedules or shifts worked (see Table 7). Respondents reporting the greatest satisfaction with work schedule were those where both husband and wife worked the first shift. Approximately 98% of women and 93% of men working this shift combination were satisfied with their work schedules.

More than 60% of all respondents reported being satisfied or very satisfied with the job tasks performed at work. The percentages were similar for all shift combinations (see Table 8).

Test of Hypotheses

The following three hypotheses were tested by an analysis of variance (ANOVA): (a) Husbands and wives both working day shift perceive less family stress (as defined by the family-management strain scale and family-role strain scale) than husbands and wives working non-standard shifts; (b) Husbands and wives both working the same non-standard shift perceive more family stress than husbands and wives working a standard shift (day shift) but less family stress than husbands and wives both working different shift combinations; (c) Wives perceive more family stress than husbands over all shift combinations.

As can be seen from Table 9, mean scores for the family-management strain scale were 2.80, 2.76, 2.72, and 2.62 for shift combinations 1, 2, 3, and 4, respectively. Only those respondents with no missing values on the family-management strain scale were included in this analysis (n = 262).

Table 7

Numbers and Percentages of Male and Female Respondents for

Shift Combination by Satisfaction with Work Schedule

	Shift Combination*							
	1		2		3		4	
Work Schedule	Female	Male	Female	Male	Female	Male	Female	Male
Very satisfied	12 (24.5)**	6 (21.4)	2 (5.7)	4 (20.0)	6 (6.5)	5 (45.5)	6 (22.2)	4 (14.8)
Satisfied	32 (65.3)	20 (71.4)	15 (42.9)	7 (35.0)	51 (54.8)	6 (54.5)	16 (59.3)	15 (55.6)
Neither satisfied or dissatisfied	2 (4.1)	2 (7.1)	5 (14.3)	2 (10.0)	10 (10.8)	-	3 (11.1)	5 (18.5)
Dissatisfied	1 (2.0)	-	8 (22.9)	5 (25.0)	16 (17.2)	-	2 (7.4)	3 (11.1)
Very dissatisfied	2 (4.1)	-	5 (14.3)	2 (10.0)	10 (10.8)	-	-	-
Total	49 (100)	28 (100)	35 (100)	20 (100)	93 (100)	11 (100)	27 (100)	27 (100)

* Shift Combination

1 = husband/wife 1st shift
2 = husband/wife same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift

** Percentages in parentheses

Table 8

Numbers and Percentages of Male and Female Respondents for Shift Combination by Satisfaction with Job Tasks

	Shift Combination*							
	1		2		3		4	
Job Tasks	Female	Male	Female	Male	Female	Male	Female	Male
Very satisfied	2 (4.1)**	5 (17.9)	1 (2.9)	1 (5.0)	8 (8.6)	1 (9.1)	4 (14.8)	5 (18.5)
Satisfied	29 (59.2)	18 (64.3)	21 (60.0)	13 (65.0)	64 (68.8)	6 (54.5)	13 (48.1)	18 (66.7)
Neither satisfied or dissatisfied	7 (14.3)	4 (14.3)	6 (17.1)	3 (15.0)	15 (16.1)	4 (36.4)	6 (22.2)	3 (11.1)
Dissatisfied	7 (14.3)	1 (3.6)	4 (11.4)	3 (15.0)	5 (5.4)	-	2 (7.4)	1 (3.7)
Very dissatisfied	4 (8.2)	-	3 (8.6)	-	1 (1.1)	-	2 (7.4)	-
Total	49 (100)	28 (100)	35 (100)	20 (100)	93 (100)	11 (100)	27 (100)	27 (100)

* Shift Combination

1 = husband/wife 1st shift
2 = husband/wife same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift

** Percentages in parentheses

A sex by shift-combination analysis of variance (ANOVA) (see Table 9) performed on the family-management strain means yielded a significant main effect for sex F (1,254) = 3.88, $p < .05$, but failed to detect significant effects for shift combinations and for the sex by shift-combination interaction ($p > .05$). Thus, these results fail to support hypotheses one and two. However, hypothesis four was supported since women exhibited greater family-management strain scores than men ($\bar{x}$ women = 2.79, $\bar{x}$ men = 2.59; $p < .05$).

Perceived family role strain was measured through the use of the family role strain scale. As can be seen in Table 10, role strain means were 2.98, 3.08, 3.08, and 2.79 for shift combinations 1, 2, 3, and 4, respectively (n = 256). A sex by shift-combination ANOVA (see Table 10) yielded a significant main effect for sex, F (1,248) = 10.18, $p < .002$, and a marginally significant main effect for shift combination, F (3,248) = 2.50, $p < .06$, but failed to detect a significant sex by shift-combination interaction $p > .05$. Family role strain mean scores, when compared using Scheffe's method, did not differ significantly for shift combinations 1 (both husband and wife 1st shift), 2 (husband and wife on same non-standard shift), and 3 (husband 1st, wife non-standard), thereby failing to support hypotheses one or two. However, the role strain mean for respondents in shift combination 4 (wife 1st, husband non-standard) was significantly lower than that for shift combination 3, $p < .05$. Shift combination 4 was marginally lower ($p < .10$) than shift combination 2. A lower mean score indicates less family role strain. As was the case for family-management strain, women respondents exhibited significantly higher family role strain than men respondents

Table 9

Analysis of Variance of Family Management Strain for Sex by Shift Combination

Source	Sum of Squares	df	Mean Square	F	Significance of F
Sex	2.30	1	2.303	3.88	0.050*
Shift combination	1.14	3	0.378	0.64	0.591
Sex/shift combination interaction	0.08	3	0.268	0.45	0.717
Explained	4.10	7	0.586	0.99	0.441
Residual	150.71	254	0.593		
Total	154.80	261	0.593		

N = 262

Mean Scores on Family Management Strain for Sex by Shift Combination

	Shift Combination				
Sex	1	2	3	4	mean
Female (n=185)	2.89	2.90	2.74	2.62	2.79
Male (n=77)	2.64	2.54	2.50	2.61	2.59
Mean	2.80	2.76	2.72	2.62	

* $p < .05$

Table 10

Analysis of Variance of Family Role Strain for Sex by Shift Combination

Source	Sum of Squares	df	Mean Square	F	Significance of F
Sex	2.53	1	2.533	10.181	0.002*
Shift combination	1.87	3	0.623	2.505	0.060
Sex/shift combination interaction	0.92	3	0.305	1.226	0.301
Explained	6.57	7	0.939	3.773	0.001
Residual	61.70	248	0.249		
Total	68.27	255	0.268		

N = 256

Mean Scores on Family Role Strain for Sex by Shift Combination

	Shift Combination				
Sex	1	2	3	4	mean
Female (n=179)	3.13	3.10	3.09	2.90	3.08
Male (n =77)	2.72	3.04	2.96	2.68	2.81
Mean	2.98	3.08	3.08	2.79	

* $p < .05$

($\bar{x}$ women = 3.08, $\bar{x}$ men = 2.81; $p < .05$), thereby providing additional support for hypothesis four.

The fifth hypothesis, the more traditional one or both members of the dual-earner couple is in sex-role preference the greater the perceived level of family stress, was tested using regression analyses. Family-management strain and family-role strain significance were determined through separate analyses. While sex of respondents and the number of children living at home under 18 were significant predictors of family-management strain ($p < .05$, and $p < .007$, respectively), sex-role preference was not a significant predictor ($p > .05$) leading to the rejection of hypothesis five. An R^2 value of .05054 was obtained (see Table 11). The R^2 value is the percentage of variation or variance that can be explained through the prediction in this analyses.

Sex-role preference ($p < .000$), age of respondent ($p < .000$), sex of respondent ($p < .05$), and number of children living at home under 18 ($p < .05$) were significant predictors of family-role strain, thereby supporting hypothesis five. In this case, an R^2 value of .17361 was obtained (see Table 12). In addition, R^2 change values were obtained. The R^2 change value defines the amount of explained change that occurs to R^2 as each variable or variables cluster is added to the regression analysis. The R^2 change was greatest for the variables sex of respondent, age of respondent, number of children under 18 living at home when tested as a single group (.14137).

Mean rating scores, in response to the question of how much the job and family life interfere with each other, were 2.27, 2.42, 2.73, and 2.46 (see Table 13) for shift combinations 1, 2, 3, and 4,

Table 11

Regression of Family Management Strain on Sex Role, Shift Combination, Gender, Age, Number of Children Under 18, and Education

Predictors	Sum of Squares	df	R^2 Change	F	Significance of F
Sex role	.87	1	.050	1.477	.2253
Shift combination	.30	1	.002	.515	.4736
Sex, age, no. of children, and education	8.19	4	.047	3.464	.0088**
Regression	8.68	6		2.449	.0253
Residual	163.08	276			

Multiple R	.22
R square	.05
Adjusted R square	.03
Standard error	.77

F = 2.449 Significance F = .0253

Predictors	B	SE B	Beta	T	Significance of T
Sex role	-0.140	.115	-0.074	-1.215	.2253
Shift combination	-0.027	.037	-0.042	-0.718	.4736
No. of children	0.150	.055	.161	2.697	.0074*
Sex	-0.207	.106	-0.119	-1.950	.0522*
Age	-0.010	.007	-0.092	-1.525	.1285
Education	.024	.059	.025	.408	.6837
Constant	3.277	.471		6.964	.0000

N = 289

$p < .05$

Table 12

Regression of Family Role Strain Scores on Sex Role, Shift Combination, Gender, Age, Number of Children Under 18, and Education

Predictors	Sum of Squares	df	R^2 Change	F	Significance of F
Sex role	4.40	1	.057	18.507	.0000*
Shift Combination	.00	1	.000	.000	.9849
Sex, age, no. of children, and education	10.97	4	.141	11.547	.0000*
Regression	13.48	6		9.454	.0000
Residual	64.14	270			

Multiple R	.42
R square	.17
Adjusted R^2	.15
Standard error	.49

F = 9.454 Significance of F = .0000

Predictors	B	SE B	Beta	T	Significance of T
Sex role	-0.312	.073	-0.243	-4.302	.0000*
Shift combination	-4.496-04	.024	-0.001	-0.019	.9849
No. of children	.069	.036	.108	1.931	.0545
Sex	-0.289	.067	-0.247	-4.308	.0000*
Age	-0.019	.004	-0.260	-4.582	.0000*
Education	-0.014	.038	-0.022	0.379	.7053
Constant	4.567	.302		15.117	.0000

N = 277

*$p < .05$

Table 13

Analysis of Variance of Job/Family Interference for Sex by Shift Combination

Source	Sum of Squares	df	Mean Square	F	Significance of F
Sex	1.69	1	1.689	1.798	0.181
Shift combination	7.42	3	2.472	2.632	0.050*
Sex/shift combination interaction	0.08	3	0.027	0.290-01	0.993
Explained	11.73	7	1.675	1.784	0.090
Residual	264.77	282	0.939		
Total	276.50	289	0.957		

N = 290

Mean Scores on Job/Family Interference for Sex by Shift Combination

	Shift Combination			
	1	2	3	4
Mean	2.27	2.42	2.73	2.46

$p < .05$

respectively. A sex by shift-combination ANOVA (see Table 13) was performed on these means. While sex of respondent or the sex/shift-combination interaction were not significant ($p < .05$), shift combination of respondents yielded a significant main effect ($p < .05$). As determined by Scheffe's method, mean ratings of job and family interference were significantly lower for shift combination 1 than for shift combination 3.

CHAPTER V

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

The primary purpose of this research was to investigate relationships between different shiftwork combinations of dual-earner dyads and their perceptions of family management strain and family role strain. A secondary purpose was to examine the demographic factors of age, sex, number of children under 18 years of age, and sex-role perceptions as these variables relate to family management strain and family role strain.

The study was based on the reasoning that recent changes in the work force requiring both spouses to work, sometimes different shifts, are likely to impact on psychological and physical demands of family life. Researchers such as Finn (1981) have reported that roughly one in six full time, non-farm, wage and salary employees works a shift other than the typical daytime schedule. Kanter (1977) argued that family routines are predicated on work schedules rather than work schedules being built around family routines, and researchers such as Bast (1960), Mann and Hoffman (1960), Maurice and Monteil (1965), and Pleck et al. (1980) have reported that shiftwork for dual wage earners is likely to magnify issues that precipitate family conflicts and stress. The basis for these views is that the amount of time available to family members to engage in joint activities and to fulfill management responsibilities is reduced if the free time of one adult family member does not correspond to the free time of other family members.

In the present investigation, it was expected that shiftwork discrepancies existing among dual-earner dyads, which are associated with decreased time for shared activities, would have detrimental effects on spouses' perceptions of family management strain and family role strain. It was further expected that the greater the shiftwork discrepancies, the greater the amount of family management strain and family role strain reported by respondents. Specifically, it was expected that (1) dyads working the same shift, whether it be a standard or non-standard shift, would report less family management strain and family role strain than dyads working different shifts, (2) that women, due to a long history of traditional views regarding marriage and family, would report greater family management/role strain, and (3) that individuals holding traditional views on sex roles for men and women would report greater family management strain and family role strain than men and women with liberal views of adult sex roles in the family.

Shiftwork Effects

Mott et al. (1965) and Keith and Schafer (1980) argued that the view that difficulties encountered by males in trying to fulfill the roles of father and husband, and in engaging in social activities, are by-products of shiftwork, and that time demands both in the workplace and in the home influence role strain in both sexes. House (1980) also reported that shiftwork was related to individual conflicts both on and off the job. The present study was conducted to remedy some of the sampling deficiencies of previous research. Women and minorities have been underrepresented and, in some cases, excluded from previous investigations; and much of the previous research has focused on the shift

worked by one spouse, usually the male, and has failed to take into account the importance of the spouses' shift combination on family interaction and management.

The findings of the present study provide relatively little support for the views and findings reported in earlier research. In the present case, shift combination of working spouses was not a significant determiner of family management strain perceptions and only a marginally significant factor for family role strain perceptions. However, a marginally significant sex by shift interaction indicated that women working a non-standard shift with husbands working first shift experienced significantly more family role strain than women working a standard shift with husbands on a non-standard shift. It should also be noted that respondents in dyads where women and men worked the same non-standard shift reported a marginally higher level of family role strain ($p < .10$) than those in dyads where women worked first shift and men worked a non-standard shift. It would appear that women working first shift feel they can more effectively meet family role expectations than women working on non-standard shifts. In addition, one can speculate that women continue to feel that men are lacking in good child care provider skills. Several respondents reported that even though their husbands were home with the children while they worked, there was some dissatisfaction with this arrangement.

Contrary to expectation, respondents in shift combination 1 (both husband and wife working first shift) reported the highest degrees of family management strain. This could reflect a perception of heightened responsibilities and job stress associated with working a day shift.

In shift combinations where dyads worked different schedules, there were some indications that meeting family members' needs was sometimes easier than for dyads working a standard shift. One respondent reported, "Things I am unable to do for my children, due to my work schedule, my husband usually does for them." Another respondent reported that having different work schedules gave her spouse the opportunity to spend time alone with the children. The major drawback reported by respondents working different shifts was not spending enough time with the spouse and not being able to participate in activities that involved the whole family.

When dyads worked the same non-standard shift, there also were indications that the couple had worked out some type of arrangement to meet the added difficulties of shiftwork. Many respondents, after completing the instrument, indicated that they lived close to relatives and that they sometimes rely heavily on extended family resources and close friends to assist in the management of family resources and in the fulfillment of family needs. For example, one respondent working a non-standard shift with a spouse working the same non-standard shift stated, "If I am working and my children need to go to the dentist or even the doctor, my mother will take them." Another non-standard shift respondent reported that her mother or father would come over to her house to watch the children until she got off work or have them spend the night at their house.

A second factor to be considered concerns the possibility that families in which spouses work different shifts engage in fewer activities with their children than families where spouses work the same shift.

Further anecdotal information suggested that afterschool activities were not very important to these respondents. Several respondents in shift-discrepant dyads reported that these activities (e.g., taking children to afterschool activities) did not apply to them. When one respondent was asked to explain this response, she stated, "My kids don't participate in any afterschool activities and my kids and I are not really interested in returning to school once the school day is over." Another respondent reported that she didn't attend afterschool events such as P.T.A. because it didn't do any good to go. One could speculate that for some of these respondents, participating in activities outside the home is not placed in high regard and that involvement with the school in particular is likely to be less apparent in these families. It may be the case that withdrawal from school activities and other activities may reflect the working dyad's means of reducing potential management conflicts by reducing activity level.

So it appears that while non-standard shiftwork, whether it involves one spouse or both spouses, would seem, on theoretical grounds, to interfere with family management and to show up in the form of heightened perceptions of family management strain and family role strain. Some, if not many, of the present respondents appear to have developed highly adaptable arrangements and solutions to deal with these circumstances.

Sex of Respondent Effects

Most previous investigations of shiftwork effects on the family have been limited to men. Mott et al. (1965) reported that men experience difficulties in spending time with family members when working non-standard shifts, while Keith and Schafer (1980) reported greater role

strain among men with working wives. Further, Keith and Schafer argued that work-family role strain was a major determinant of depression among men and that work as well as the mental health of husbands may suffer when both spouses seek to juggle employment outside of their home and family obligations. Moreover, Rappoport and Rappoport (1971) and Hoffman and Nye (1974) suggested that even though men may help with household chores and child care, women who work outside the home are typically described as taking on a second job. They argued that the public acceptance of a working mother is premised on the belief that she continue to put forth her major efforts at home as mother. According to Mason and Bumpass (1975), "If a woman does not do this, then the public thinks she is 'neglecting' her maternal role." On the basis of this reasoning, Reiss (1976) argued that it should be no surprise that stresses increase when women work outside the home.

Consistent with this view, women in the present study reported significantly greater amounts of family management strain and family role strain than men. These results, however, did not support the position of Keith and Schafer (1980), i.e., that men are more susceptible to stress due to shiftwork than women when both spouses seek to juggle employment and family obligations. The present results are consistent with the view that women feel a greater responsibility for managing family activities and a greater responsibility for meeting the emotional and physical needs of family members. Working women continue to be concerned about getting enough things done, worrying about what others think of them, and worrying about children more than men. Despite their

abilities to devise adaptive means, such as relying on extended family and friends to help resolve management problems, perceived expectations seem to create greater perceptions of family stress.

Traditional and Liberal Sex Role Perceptions

It was expected that the respondents' beliefs about male and female roles would be a significant predictor of family management strain and family role strain. The basis for this reasoning was that dyads holding traditional sex role perceptions are likely to place more of the burden for family management on the working wife--a circumstance likely to be reflected in heightened stress scores not only among women but for men as well in that women may not be able to do all that is expected of them. The results of the present investigation did not support this line of reasoning for family management strain but did support statistically this line of reasoning for family role strain. Respondents' reported perceptions of men and women's roles did not predict reliably scores received on the family management strain scale but did predict reliably scores received on the family role strain scale.

One possible explanation for the discrepancy involved the attitudinal character of both the sex role perception scale and family role strain scale. Huber and Spitze (1981) have argued that respondents' perceptions of family role strain are based on attitudes about men and women rather than about their behavior. On the other hand, the family management scale focuses on behavior of family members. Hence, there appears to be a reliable relationship between sex role attitudes and attitude about roles but no apparent relationship between sex role attitudes and actual management behavior.

Demographic Predictors of Family Management and Role Strain

In addition to sex role perceptions, other demographic variables were entered into the multivariate analyses to predict family management and family role strain, especially age of respondent, sex of respondent, educational level, and number of children under 18 living at home. Based on the work of Keith and Schafer (1980), it was expected that younger respondents and respondents with the greater numbers of children under 18 living at home would report higher levels of family management strain and family role strain.

The findings of the present study support Keith and Schafer's (1980) contentions. Age of respondents and number of children under 18 living at home were significant predictors for both family management strain and family role strain. Nevertheless, although these factors accounted for a statistically significant variation in family management strain and family role strain, they explained only a small portion of the variance on these measures. Along with sex of respondents, these variables accounted for only 5% of the variation in family management strain scores and 17% of variation in family role strain scores suggesting that major portions of family management strain and family role strain occur from other variables not used in the study.

Job/Family Interference Reported by Respondents

One of the questions on the research survey required respondents to rate how much their job and family interfered with each other. Dyads in which both spouses worked first shift reported significantly less job/family interference than dyads in which the man worked first shift and

the woman a non-standard shift. However, the amount of job/family interference reported by dyads working the same non-standard shift and dyads where women worked first shift and men worked a non-standard shift was not significantly different from dyads working first shift. In the former case, the lack of significance may reflect greater opportunities for the spouses to spend time together. In the latter case, the lack of significance here may reflect increased opportunities for women to be with children during the afternoon and evening hours.

Conclusions

The present research was designed to investigate relationships between different shiftwork combinations of dual-earner dyads and their perceptions of family management strain and family role strain. Additionally, demographic factors of age, sex, number of children under 18 years of age living at home, and sex role perceptions were examined to determine their relationships to family management strain and family role strain. The results of the investigation point out the adaptive capacities of working dyads. Respondents in this study appear to have developed satisfactory solutions to problems associated with working non-standard shifts and discrepant shift combinations. It should be noted that while neither shift combination nor sex of respondents was associated with management strain, each of these factors was related at least marginally to role strain. Thus, while shiftwork and the likelihood that women experience greater expectations for responsibility than men would appear to create role strain, these factors are not reflected in perceptions of managing the family and home.

In view of the present results, it is unclear why previous investigations have found a variety of physical and psychological symptoms among individuals associated with shiftwork. The survey instrument used in the present investigation would appear to be reliable. As reported by Bohen and Viveros-Long (1981), the reliability coefficient for the family management strain scale was .91 and .71 for the family role strain scale. Perhaps relationship issues, e.g., marital satisfaction, would be more appropriate to investigate than family management strain and role strain. The relatively few significant results of the present study coupled with the inconsistencies found in previous research points out the need for continued investigation of shiftwork effects. Possibly, a more effective way of gathering information on dual-earner couples working shiftwork would be to use the interview method. One limitation of the present investigation is the uncertainty associated with actual reading comprehension levels of the respondents. A second limitation is that the research instrument did not focus specifically on relationship issues, e.g., communicative effectiveness, enjoyment/companionship of spouse, and marital satisfaction. The interview method would allow the researcher the opportunity to obtain information in salient areas of family life in addition to gathering more detailed responses from the subjects.

Recommendations

Two recommendations are made to future researchers investigating shiftwork effects on dual-earner couples. One is to use the interview method to gather data on relationship issues, e.g., levels of communication, enjoyment/companionship of spouses, and marital satisfaction, in

addition to family role/management strain. This technique would also alleviate concerns about the reading levels of respondents. The second recommendation is to gather data from both members of dual-earner couples within households instead of relying on reported data from one spouse. Further, it would be useful to compare results from couple data analyses with aggregate data analyses.

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APPENDIX A

LETTER REQUESTING PARTICIPATION

Date_____

Dear Employee:

I am now working on my doctoral dissertation research in the Department of Child Development and Family Relations at UNC-G and am interested in learning about how family life is affected when both husband and wife work shifts, in some cases different shifts. If you have a spouse who also works shiftwork, I would very much appreciate your help in filling out this questionnaire. Only members of couples where both spouses work shiftwork can tell about the way family life is affected.

Your participation and your answers to the survey will be anonymous. Names or other information that would tell who you are will not be on the survey questionnaire. The questions are not embarrassing and can be answered quickly. Your participation is voluntary. I will be the only person who will see the answers to the questionnaire.

The information from all the completed survey questionnaires will be placed in a computer where it will be analyzed to see what effects, if any, shiftwork and different shiftwork combinations have on the family.

Copies of the results in summary can be obtained by completing the information below and returning it to me. Thank you for being a part of this research effort.

Sincerely,

James L. Burston
Route 5, Box 601
Reidsville, NC 27320

Regardless of your willingness to participate, please print your name and address below if you would like a group summary report of the overall findings of this project sent to you.

Name_____

Address_____

_____

Thank you very much.

APPENDIX B

SURVEY ON SHIFTWORK

SURVEY ON SHIFTWORK

Please answer a few questions about yourself.

INSTRUCTIONS: Circle the letter in front of the correct answer, or write it on the blank line.

1. Sex:
   a. male
   b. female

2. Age_____

2b. Place of Work_____

3. a. single, living along
   b. single, living with a partner
   c. married
   d. separated
   e. divorced
   f. widow/widower

4. Race:
   a. Black
   b. White
   c. Native American
   d. Other_____

5. How many children under 18 do you have living with you?_____

5b. Please list their ages:_____

6. Educational Background:
   a. 8th grade or less
   b. Some high school but did not finish
   c. High School graduate or GED
   d. Some college
   e. College degree or more

6b. Educational background (husband/wife):
   a. 8th grade or less
   b. Some high school but did not finish
   c. High School graduate or GED
   d. Some college
   e. College degree or more

7. Last year I made about:
   a. Less than $5,000
   b. $5,000 - $9,999
   c. $10,000 - $14,999
   d. $15,000 - $19,999
   e. $20,000 - $24,999
   f. $25,000 - $29,999
   g. $30,000 - more

7b. Last year my husband/wife made about:
   a. Less than $5,000
   b. $5,000 - $9,999
   c. $10,000 - $14,999
   d. $15,000 - $19,999
   e. $20,000 - $24,999
   f. $25,000 - $29,999
   g. $30,000 - more

8. What kind of work do you do? Give the exact job title if possible. (For example: fixer, machine operator, service person, twister, etc.)

_____

9. About how many hours do you work on this job in the average week?

_____hours

10. What are your regular starting and ending hours?_____To_____
(Please say whether A.M. or P.M., for example 11 P.M. to 7 A.M.)

11. What kind of work does your husband/wife do? Give the exact title if possible. (For example: fixer, machine operator, service person, twister, etc.)

_____

12. About how many hours does your husband/wife work on this job in the average week?

_____hours

13. What are your husband/wife's regular starting and ending hours?

_____To_____(Please say whether A.M. or P.M., for example 11 P.M. to 7 A.M.)

14. About how long have you been working your present shift?_____

15. About how long has your husband/wife been working their present shift?_____

Circle the "X" that best describes the way you feel for each question below:

16. How satisfied are you with:

	Very satisfied	Satisfied	Neither satisfied nor dis-satisfied	Dis-satisfied	Very dis-satisfied
a. your job in general?	X	X	X	X	X
b. your pay?	X	X	X	X	X
c. the number of hours you work?	X	X	X	X	X
d. the schedule of your working hours or shift?	X	X	X	X	X
e. the sorts of things you do on your job?	X	X	X	X	X

17. Circle the "X" that best describes how easy or difficult it is for you to arrange your time to do each of the following activities:

		Very Easy	Somewhat Easy	Neither Easy nor Difficult	Somewhat Difficult	Very Difficult	Not Applicable
a.	To avoid the rush hour?	X	X	X	X	X	X
b.	To go to work a little later than usual if you need to?	X	X	X	X	X	X
c.	To go to health care appoint-ments?	X	X	X	X	X	X
d.	To go on errands (e.g., shoe repair, post office, car serviced)?	X	X	X	X	X	X
e.	To go shopping (e.g. gro-ceries, clothes, drug store)?	X	X	X	X	X	X
f.	To make tele-phone calls for appoint-ments or services?	X	X	X	X	X	X
g.	To take care of your house-hold chores?	X	X	X	X	X	X
h.	To help or visit neigh-bors or other friends?	X	X	X	X	X	X
i.	To partici-pate in community activities?	X	X	X	X	X	X

	Very Easy	Somewhat Easy	Neither Easy nor Difficult	Somewhat Difficult	Very Difficult	Not Applicable
j. To adjust your work hours to the needs of other family members?	X	X	X	X	X	X
k. To have meals with your family?	X	X	X	X	X	X
l. To spend fun or educational time with your family?	X	X	X	X	X	X

18. Circle the "X" for each statement that describes how often you feel each of the following?

	Always	Most of the time	Some of the time	Rarely	Never	Not Applicable
a. My job keeps me away from my family too much.	X	X	X	X	X	X
b. I feel I have more to do than I can handle comfortably.	X	X	X	X	X	X
c. I have a good balance between my job and my family time.	X	X	X	X	X	X
d. I wish I had more time to do things for the family.	X	X	X	X	X	X
e. I feel physically drained when I get home from work.	X	X	X	X	X	X
f. I feel emotionally drained when I get home from work.	X	X	X	X	X	X

	Always	Most of the time	Some of the time	Rarely	Never	Not Applicable
g. I feel I have to rush to get everything done each day.	X	X	X	X	X	X
h. My time off from work does not match other family members' schedules well.	X	X	X	X	X	X
i. I feel I don't have enough time for myself.	X	X	X	X	X	X
j. I worry that other people at work think my family interferes with my job.	X	X	X	X	X	X
k. I feel more respected than I would if I didn't have a job.	X	X	X	X	X	X

19. How much time would like your spouse to spend taking care of or doing things with your children?

    1. More time than now
    2. Less time than now
    3. Same amount as now
    8. Not applicable

20. How much time would your spouse like <u>you</u> to spend taking care of or doing things with your children?

    1. More time than now
    2. Less time than now
    3. Same amount as now
    8. Not applicable

21. Circle the "X" that best describes <u>how often you feel</u> each of the following:

	Always	Most of the time	Some of the time	Rarely	Never	Not Applicable
a. I worry whether I should work less and spend more time with my children.	X	X	X	X	X	X
b. I am a better parent because I am not with my children all day.	X	X	X	X	X	X

		Always	Most of the time	Some of the time	Rarely	Never	Not Applicable
c.	I find enough time for the children.	X	X	X	X	X	X
d.	I worry about how my kids are while I'm working.	X	X	X	X	X	X
e.	I have as much patience with my children as I would like.	X	X	X	X	X	X
f.	I am comfortable with the arrangements for my children while I am working.	X	X	X	X	X	X
g.	Making arrangements for my children while I work involves a lot of effort.	X	X	X	X	X	X
h.	I worry that other people feel I should spend more time with my children.	X	X	X	X	X	X

22. Circle the "X" that best describes how easy or difficult it is for you to do each of the following:

		Very Easy	Somewhat Easy	Not Easy or Difficult	Somewhat Difficult	Very Difficult	Not Applicable
a.	To take your children to health care appointments.	X	X	X	X	X	X
b.	To take your children to or from a child care setting or school.	X	X	X	X	X	X
c.	To go places with your children after school.	X	X	X	X	X	X

	Very Easy	Somewhat Easy	Not Easy or Difficult	Somewhat Difficult	Very Difficult	Not Applicable
d. To go to school events and appointments for your children.	X	X	X	X	X	X
e. To make alternative child care arrangements when necessary (e.g., school snow day).	X	X	X	X	X	X
f. To be home when your children get home from school.	X	X	X	X	X	X
g. To stay home with a sick child.	X	X	X	X	X	X
h. To make arrangements for children during summer vacation.	X	X	X	X	X	X
i. To have relaxed, pleasant time with your children.	X	X	X	X	X	X

23. How much do your job and family interfere with each other?

    a. Not at all
    b. Not too much
    c. Somewhat
    d. A lot

24. In what ways do they interfere with each other?

_____

_____

_____

25. Please circle the "X" that best describes how much you agree or disagree with the following statements:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
a. A mother should realize that her greatest rewards and satisfaction in life come through her children.	X	X	X	X	X
b. A mother of preschool children should work only if the family really needs the money a whole lot.	X	X	X	X	X
c. A working mother should give up her job whenever it makes a hardship for her children.	X	X	X	X	X
d. There should be more daycare centers and nursery schools so that more mothers of preschool children could work.	X	X	X	X	X
e. If being a mother is not satisfying enough, she should take a job.	X	X	X	X	X
f. A mother of preschool children should not work because it is not good for the child.	X	X	X	X	X
g. A mother with preschoolers should be able to work as many hours per week as their father.	X	X	X	X	X
h. The father should be the main financial support of his children.	X	X	X	X	X
i. The father should spend as much time as the mother in looking after the daily needs of his children.	X	X	X	X	X

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
j. The father should be the children's main disciplinarian.	X	X	X	X	X
k. The father has the special responsibility to discipline the children firmly.	X	X	X	X	X
l. The father has a special responsibility to set an example to his children of leadership and assertiveness.	X	X	X	X	X

APPENDIX C

DEMOGRAPHIC DATA FOR MALE AND FEMALE RESPONDENTS IN EACH SHIFT COMBINATION

Table 1C

Numbers and Percentages of Male and Female Respondents for Shift Combination by Number of Children Under 18 Living at Home

	Shift Combination*							
	1		2		3		4	
No. of Children	Female	Male	Female	Male	Female	Male	Female	Male
1	**22 (44.9)	11 (39.3)	18 (51.4)	13 (65.0)	37 (39.8)	4 (36.4)	10 (37.0)	15 (55.6)
2	21 (42.9)	12 (42.9)	11 (31.4)	5 (25.0)	39 (41.9)	6 (54.5)	16 (59.3)	10 (37.0)
3	3 (6.1)	3 (10.7)	4 (11.4)	1 (5.0)	12 (12.9)	1 (9.1)	1 (3.7)	2 (7.4)
4	3 (6.1)	2 (7.1)	2 (5.7)	1 (5.0)	4 (4.3)	-	-	-
5	-	-	-	-	-	-	-	-
6	-	-	-	-	1 (1.1)	-	-	-
Total	49 (100)	28 (100)	35 (100)	20 (100)	93 (100)	11 (100)	27 (100)	27 (100)

* Shift Combination
1 = husband/wife 1st shift
2 = husband/wife same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift

** Percentages in parentheses

Table 2C

Numbers and Percentages of Male and Female Respondents for Shift Combination by Preschoolers, Youths, and Teens Living at Home

	Shift Combination*							
	1		2		3		4	
No. of Children	Female	Male	Female	Male	Female	Male	Female	Male
No preschoolers under 5 y/o	**33 (67.3)	18 (64.3)	15 (42.9)	6 (30.0)	55 (59.1)	4 (36.4)	17 (63.0)	13 (48.1)
Preschoolers	16 (33.7)	10 (35.7)	20 (57.1)	14 (70.0)	38 (40.9)	7 (63.6)	10 (37.0)	14 (51.9)
No youth 5 - 11 y/o	21 (42.9)	10 (35.7)	20 (57.1)	13 (65.0)	40 (43.0)	8 (72.7)	13 (48.1)	17 (63.0)
Youth 5 - 11 y/o	28 (57.1)	18 (64.3)	15 (53.6)	7 (35.0)	53 (57.0)	3 (27.3)	14 (51.9)	10 (37.0)
No teens 12 - 17 y/o	26 (53.1)	15 (53.6)	24 (68.6)	16 (80.0)	59 (63.4)	9 (81.8)	16 (59.3)	17 (63.0)
Teens 12 - 17 y/o	23 (46.9)	13 (46.4)	11 (31.4)	4 (20.0)	34 (36.6)	2 (18.2)	11 (40.7)	10 (37.0)

* Shift Combination

1 = husband/wife 1st shift
2 = husband/wife same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift

** Percentages in parentheses

Table 3C

Numbers and Percentages of Male and Female Respondents for Shift Combination by Length of Time Working Present Shift

	Shift Combination*							
	1		2		3		4	
Length of Time	Female	Male	Female	Male	Female	Male	Female	Male
Less than one year	1 (2.0)**	-	2 (5.7)	2 (10.0)	22 (23.7)	1 (9.1)	2 (7.4)	6 (22.2)
1 - 5 years	21 (42.9)	14 (50.0)	19 (54.3)	11 (55.0)	41 (44.1)	5 (45.5)	7 (25.9)	13 (48.1)
5 - 10 years	15 (30.6)	10 (35.7)	12 (34.3)	5 (25.0)	27 (29.0)	4 (36.4)	12 (44.9)	3 (11.1)
Over 10 years	12 (24.5)	4 (14.3)	2 (5.7)	2 (10.0)	3 (3.2)	1 (9.1)	6 (22.2)	5 (18.5)
Total	49 (100)	28 (100)	35 (100)	20 (100)	93 (100)	11 (100)	27 (100)	27 (100)

* Shift Combination

1 = husband/wife 1st shift
2 = husband/wife same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift

** Percentages in parentheses

Table 4C

Numbers and Percentages of Male and Female Respondents for

Shift Combination by Hours Worked Per Week

	Shift Combination*							
	1		2		3		4	
No. of Hours	Female	Male	Female	Male	Female	Male	Female	Male
30.0	-	-	-	-	-	-	-	-
35.0	1 (2.0)**	-	-	-	-	-	-	-
37.5	2 (4.1)	1 (3.6)	3 (8.6)	1 (5.0)	-	-	2 (7.4)	3 (11.1)
38.0	-	1 (3.6)	-	-	-	-	2 (7.4)	-
38.5	-	-	-	1 (5.0)	-	-	-	-
40.0	38 (77.6)	17 (60.7)	25 (71.4)	14 (70.0)	72 (77.4)	7 (63.6)	16 (59.3)	14 (51.9)
41.0	1 (2.0)	-	-	-	-	-	-	-
42.0	-	1 (3.6)	-	-	-	1 (9.1)	-	-
43.0	-	1 (3.6)	-	-	-	-	-	1 (3.7)
44.0	-	1 (3.6)	-	-	2 (2.2)	-	-	1 (3.7)
45.0	-	-	-	1 (5.0)	-	2 (18.2)	-	-
46.0	-	1 (3.6)	-	-	-	-	-	-
48.0	6 (12.2)	3 (10.7)	7 (20.0	3 (15.0)	19 (20.4)	1 (9.1)	7 (25.9)	6 (22.2)
50.0	1 (2.0)	-	-	-	-	-	-	-
56.0	-	1 (3.6)	-	-	-	-	-	-
70.0	-	1 (3.6)	-	-	-	-	-	1 (3.7)

* Shift Combination
  1 = husband/wife 1st shift
  2 = husband/wife same non-standard shift
  3 = husband 1st shift/wife non-standard shift
  4 = wife 1st shift/husband non-standard shift

** Percentages in parentheses

APPENDIX D

NUMBER OF RESPONDENTS IN EACH SHIFT COMBINATION

Table 1D

Number of Respondents by Shift Combination Used in Analyses of Family Management Strain and Family Role Strain

	Shift Combination*				
Strain	1	2	3	4	Total
Family management	72	48	94	48	262
Family role	68	47	90	51	256

* Shift Combination

1 = husband/wife 1st shift
2 = husband/wife same non-standard shift
3 = husband 1st shift/wife non-standard shift
4 = wife 1st shift/husband non-standard shift